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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,614	08/05/2005	Joerg Issberner	262338US0PCT	8527
22850	7590	10/09/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BERNSHTEYN, MICHAEL	
			ART UNIT	PAPER NUMBER
			1796	
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			10/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/517,614

Applicant(s)

ISSBERNER ET AL.

Examiner

Michael Bernshteyn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on July 5, 2007. Claims 1, 3, 6, 7, 12-19 and 22-24 have been amended; claims 8 and 9 have been cancelled; no claims have been added.

2. In view of the amendment(s), and remarks, filed on July 5, 2007, the rejection(s) of claims 1-12 under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, 35 U.S.C. 103(a) as obvious over Krutko et al. (SU 1435580), the rejection of claims 1-21 under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Werres et al. (WO 95/13296), and the rejection of claims 22-24 under 35 U.S.C. 35 103(a) as being unpatentable over Krutko et al. in view of Behr et al. (U. S. Patent 5,756,624) have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Fujikake et al. (U. S. Patent 6,084,032) and Werres (U. S. Patent 6,656,177).

3. Claims 1-7 and 10-24 are active.

Claim Rejections - 35 USC § 103

4. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

5. Claims 1-7, 10, 13-15 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Fujikake et al. (U. S. Patent 6,084,032) in view of Werres (U. S. Patent 6,656,177).

With regard to the limitation of instant claims 1-4, Fujikake discloses a polymer composition comprises (A) a crosslinked polymer comprising (a) an α,β -unsaturated carboxylic acid and (b) a compound having at least two ethylenically unsaturated groups, and (B) at least one polymer comprising N-vinylpyrrolidone as essential monomer (abstract).

The **α,β -unsaturated carboxylic acid** (a) is not limited to any particular species but includes, among others, **acrylic acid**, **methacrylic acid**, crotonic acid, maleic acid, itaconic acid, fumaric acid and other olefinic unsaturated carboxylic acids. These may be used either singly or in combination as a mixture of two or more. Among them, **acrylic acid** is most preferred since it is readily available at low cost and can give polymers having good performance (col. 1, line 63 through col. 2, line 4).

The compound (b) having at least two ethylenically unsaturated groups is not limited to any particular species and includes, among others, acrylate esters with two or more acryloyl moieties as derived from polyols such as ethylene glycol, propylene glycol, polyoxyethylene glycol, polyoxypropylene glycol, glycerol, polyglycerol, trimethylolpropane, pentaerythritol, saccharose, sorbitol, etc. (col. 2, lines 5-22).

The above-mentioned compound (b) having at least two ethylenically unsaturated groups is used preferably at an addition level of 0.05 to 10% by weight based on the crosslinked polymer (A), which is within the claimed range (col. 2, lines 23-26).

Fujikake does not disclose that compound (b) specifically belongs to the claimed compounds (b1), (b2) or (b3) as in claim 1, and an acyclic terpene and/or a monocyclic terpene hydrocarbon as in claim 7.

Werres discloses the use of oil-in-water emulsion to prevent slime formation and inhibit the proliferation of microbes in water carrying system. The emulsion contains at least one of the following active substances as a component of the oil-phase: 1) a saturated or unsaturated, open-chain or cyclic, normal or isomeric hydrocarbon; 2) a saturated or unsaturated fatty alcohol, a saturated or unsaturated fatty acid, a fatty acid monoalkyl ester, etc.; 3) a mono- or polyester of a saturated or unsaturated fatty acid and/or polyalcohols except polyethylene alcohol; 4) a polyamide of saturated or unsaturated fatty acids; 5) an acyclic, preferably monocyclic and/or bicyclic terpene, such as a terpene hydrocarbon and/or terpene alcohol; and/or 6) a polyalkyl compound based on alkylene oxide and fatty alcohols, fatty acids and/or fatty acid glycerides of fatty acids. The proportion of oil phase in these emulsions is between 1 and 90 wt.%. The emulsions are used in concentrations of 1 to 200 ppm (abstract).

All of the above active substances are substantially identical to the claimed compounds (b1), (b2) or (b3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the above mentioned substances as compounds (b1), (b2) or (b3) as taught by Werres in Fujikake's carboxylic composition in order to prevent slime formation and inhibit the proliferation of microbes in water

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carrying system (US'177, abstract]), and thus to arrive at the subject matter of instant claim 1 and dependent claims 7 and 15.

With regard to the limitation of instant claims 5 and 6, Fujikake does not disclose the proportion of neutralization of acid group in the monomer.

With respect to the proportion of neutralization of acid group in the monomer, in the absence of showing the criticality in the specification of maintaining the definite level of neutralization of acid group in the monomer, the skilled artisan would have recognized that the claimed proportions are result-effective variables for the polymer composition. In light of this, it has been found that, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," In re Aller, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955); and, "a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed proportions in the combined teachings of Fujikake and Werres because optimization of such result-effective variables ensures proper process-ability of α,β -unsaturated carboxylic composition.

With regard to the limitation of instant claim 10, Fujikake discloses that said α,β -unsaturated compound is not limited to any particular species but includes, among

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others, acrylate esters such as methyl acrylate, ethyl acrylate, isopropyl acrylate, butyl acrylate, octyl acrylate, 2-ethylhexyl acrylate, decyl acrylate, lauryl acrylate, stearyl acrylate, glycidyl acrylate, etc. These species are preferably used at an addition level of 0.1 to 20 parts by weight per 100 parts by weight of polymer (A), which is within the claimed range (col. 4, lines 20-49).

With regard to the limitation of instant claim 13, Fujikake discloses that the polymer composition containing carboxyl group can be produced by polymerizing in advance the α,β -unsaturated carboxylic acid (a) and the compound (b) having at least two ethylenically unsaturated groups, drying the thus-obtained crosslinked polymer (A) (col. 3, 46-50). Acrylic acid-based, crosslinked polymer compositions containing carboxyl group were prepared using AIBN as the radical polymerization catalyst (col. 7, lines 52-55). Since the polymer composition containing carboxyl group carries carboxyl groups, when dissolved in water and then neutralized with a base such as sodium hydroxide or triethanolamine, gives a neutralized viscous liquid excellent in thickening property and flow characteristics (col. 4, lines 50-55).

With regard to the limitation of instant claim 14, Fujikake discloses that the concentration of the copolymerizable constituents in the aqueous polymerization mixture is within the claimed range (Examples 1-1 to 1-4, col. 5, line 28 through col. 7, line 20).

With regard to the limitation of instant claims 17-21, Werres discloses that oil and water emulsions can be used as agents for the prevention of slime formation caused by microorganisms and for the prevention of microbial growth in water-bearing systems

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because Water carrying systems, such as water and waste water piping, cooling or heating cycles, cooling lubricant systems, drilling fluids, or industrial process waters for the transport of matter contain a variety of microorganisms (col. 1, lines 5-14). Also, these oil-water emulsions are suitable for the use against microorganisms in aqueous systems in the manufacture of sugar from sugar beets (col. 2, lines 33-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ Fujikake and Werres' copolymer in service water or wastewater systems, in the recovery of sugar from sugar beet, etc. as taught by Werres with reasonable expectation of success (US'177, col. 1, lines 5-14), col. 2, lines 33-35), and thus to arrive at the subject matter of instant claims 17-21.

6. Claims 11, 12, 16 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Fujikake et al. (U. S. Patent 6,084,032) in view of Werres (U. S. Patent 6,656,177) as applied to claims 1-7, 10, 13-15 and 17-21 above and further in view of Behr et al. (U. S. Patent 5,756,624).

The disclosure of Fujikake and Werres's references resided in § 5 is incorporated herein by reference.

With regard to the limitations of claims 11, 12 and 16, the combined teaching of Fujikake and Werres does not disclose weight average molecular weight of the copolymer.

Behr discloses a copolymer consisting of monomer units derived monomers consisting of:

(A) 10 to 50% by weight of a terpene with no conjugated double bonds,

B) 20 to 50% by weight of a member selected from the group consisting of olefinically unsaturated monocarboxylic acids containing 3 to 5 carbon atoms and anhydrides thereof, and olefinically unsaturated dicarboxylic acids containing 3 to 5 carbon atoms and anhydrides thereof, and

(C) 40 to 50% by weight of an ester selected from the group consisting of esters and semiesters of olefinically unsaturated monocarboxylic containing 3 to 5 carbon atoms and esters and semiesters of olefinically unsaturated dicarboxylic acids containing 3 to 5 carbon atoms, with the proviso that the sum total of said monomers is 100% by weight (abstract).

With regard to the limitations of claims 11, 12 and 16, Behr exemplifies that weight average molecular weight of the obtained copolymer is between 1,100 and 9,600, which is within the claimed range (Examples 1-32, col. 3, line 25 through col.9, line 2).

All of the above references are analogous art because they are from the same field of endeavor concerning water-soluble copolymers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust weight average molecular weight of the obtained copolymer in the claimed range as taught by Berh for the copolymer of Fujikaka and Werres' in order to obtains terpene copolymer with improved properties with reasonable expectation of success (US'624, abstract) and thus to arrive at the subject matter of instant claims 11, 12 and 16.

With regard to the limitations of claims 22-24, the combined teaching of Fujikaka and Werres does not disclose that the copolymer can be used in a method for grinding

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and dispersing pigments in the presence of an auxiliary agent, for textile- and leather-treatment and as cleaning agent.

Behr discloses that the copolymers may be used as tackifiers in adhesives, in paints and as binders for printing inks, **textile sizing agents**, builders and hardeners. Copolymers with esters to which a relatively long-chain alcohol radical is attached are suitable for hydrophobicization, for example for **hydrophobicizing shoe and clothing leather** (col. 3, lines 117-23)

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Fujikake and Werres's terpene copolymer for textile- and leather-treatment and as cleaning agent as taught by Behr with reasonable expectation of success (US'624, col. 3, lines 117-23) and thus to arrive at the subject matter of instant claims 22-24.

Thus, the combination of Fujikake, Werres and Behr renders claims 1-7 and 10-24 *prima facie* obvious in view of absent of unexpected results commensurate in scope of claims.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Bernshteyn
Examiner
Art Unit 1713

MB
09/27/2007


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